

AMENDMENT TO THE CLAIMS

Claims 1-15. (*Canceled*)

Claim 16. (*Previously Presented*) A laminate comprising:

a sandwich structure comprising:

a core comprising a composite material, said composite material comprising fibers;

two layers of composite material, the core being positioned between the two layers, said composite material of said two layers comprising fibers;

at least a portion of the fibers of the core having a mechanical strength significantly lower than a mechanical strength of at least a portion of the fibers of at least one of the two layers.

Claim 17. (*Previously Presented*) A laminate according to claim 16, wherein:

the laminate has a total thickness e less than or equal to 3 mm.

Claim 18. (*Previously Presented*) A laminate according to claim 17, wherein:

the core has a thickness e_2 less than or equal to 2 mm.

Claim 19. (*Previously Presented*) A laminate according to claim 16, wherein:

the core and both of the two layers comprise a polymer resin matrix constituted by a single product.

Claim 20. (*Previously Presented*) A laminate according to claim 16, wherein:

the core has a thickness e_2 and the two layers have a total thickness $e_3 + e_4$, a ratio between the thickness of the core and the total thickness of the two layers being defined as follows:

$$e_2 / \frac{e_3 + e_4}{2} \leq 5.$$

Claim 21. (*Previously Presented*) A laminate according to claim 16, wherein:

the core has a thickness e_2 and the two layers have a total thickness $e_3 + e_4$, a ratio between the thickness of the core and the total thickness of the two layers being defined as follows:

$$e_2 / \frac{e_3 + e_4}{2} \leq 4.$$

Claim 22. (*Previously Presented*) A laminate according to claim 16, wherein:

the core has a thickness e_2 and the two layers have a total thickness $e_3 + e_4$, a ratio between the thickness of the core and the total thickness of the two layers being defined as follows:

$$e_2 / \frac{e_3 + e_4}{2} \leq 3.5.$$

Claim 23. (*Previously Presented*) A laminate according to claim 16, wherein:
the fibers of the core comprise textile fibers or textile micro-fibers.

Claim 24. (*Previously Presented*) A laminate according to claim 23, wherein:
the fibers of the core comprise synthetic fibers.

Claim 25. (*Previously Presented*) A laminate according to claim 24, wherein:
the synthetic fibers comprise a member selected from the group consisting of
polyamide fibers, polyolefine fibers, polyester fibers, and polyesterimide fibers.

Claim 26. (*Previously Presented*) A laminate according to claim 23, wherein:
the textile fibers comprise natural fibers.

Claim 27. (*Previously Presented*) A laminate according to claim 26, wherein:
the natural fibers comprise a member selected from the group consisting of silk
fibers, cotton fibers, linen fibers, jute fibers, and hemp fibers.

Claim 28. (*Previously Presented*) A laminate according to claim 16, wherein:
the fibers of the core comprise cellulose fibers.

Claim 29. (*Previously Presented*) A laminate according to claim 23, wherein:
the fibers of the core comprise fibers oriented within the composite material of the
core.

Claim 30. (*Previously Presented*) A laminate according to claim 29, wherein:

the fibers of the core comprise woven fibers.

Claim 31. (*Previously Presented*) A laminate according to claim 29, wherein:

the fibers of the core comprise non-woven fibers.

Claim 32. (*Previously Presented*) A laminate according to claim 23, wherein:

the fibers of the core comprise fibers randomly situated within the composite material of the core.

Claim 33. (*Previously Presented*) A laminate according to claim 16, wherein:

the fibers of at least one of the two layers comprise high performance fibers or high performance micro-fibers.

Claim 34. (*Previously Presented*) A laminate according to claim 16, wherein:

the fibers of said at least one of the two layers comprise carbon fibers or carbon micro-fibers.

Claim 35. (*Previously Presented*) A laminate according to claim 16, wherein:

the fibers of said at least one of the two layers comprise glass fibers or glass micro-fibers.

Claim 36. (*Previously Presented*) A laminate according to claim 16, wherein:

the fibers of said at least one of the two layers comprise synthetic polymer fibers or synthetic polymer micro-fibers.

Claim 37. (*Previously Presented*) A laminate according to claim 36, wherein:

the fibers of said at least one of the two layers comprise fibers made of a material comprising a member selected from the group consisting of polyolefine, oriented and stretched high-density polyethylene, polyamide, VECTRAN®, and SPECTRA®.

Claim 38. (*Previously Presented*) A laminate according to claim 16, wherein:

the fibers of said at least one of the two layers comprise metallic fibers or metallic micro-fibers.

Claim 39. (*Previously Presented*) A laminate according to claim 38, wherein:

the fibers of said at least one of said two layers comprise fibers made of a material comprising a member selected from the group consisting of aluminum, titanium, and boron.

Claim 40. (*Previously Presented*) A laminate according to claim 18, wherein:

the fibers of said at least one of the layers comprise natural fibers or natural micro-fibers.

Claim 41. (*Previously Presented*) A laminate according to claim 40, wherein:

the fibers of said at least one of said two layers comprise fibers made of silk.

Claim 42. (*Previously Presented*) A laminate according to claim 16, wherein:

the fibers of the core comprise micro-fibers having a characteristic of rupture stress CR of less than or equal to 1,500 Mpa.

Claim 43. (*Previously Presented*) A laminate according to claim 16, wherein:

the fibers of the core comprise micro-fibers having a characteristic of rupture stress CR of less than or equal to 1,000 Mpa.

Claim 44. (*Previously Presented*) A laminate according to claim 16, wherein:

the fibers of the core comprise micro-fibers having a characteristic of rupture stress CR of less than or equal to 750 Mpa.

Claim 45. (*Previously Presented*) A laminate according to claim 16, wherein:

the fibers of the core comprise micro-fibers having a modulus M in longitudinal traction of less than or equal to 50,000 Mpa.

Claim 46. (*Previously Presented*) A laminate according to claim 16, wherein:

the fibers of the core comprise micro-fibers having a modulus M in longitudinal traction of less than or equal to 30,000 Mpa.

Claim 47. (*Previously Presented*) A laminate according to claim 16, wherein:

the fibers of the core comprise micro-fibers having a modulus M in longitudinal traction of less than or equal to 20,000 Mpa.

Claim 48. (*Previously Presented*) A laminate according to claim 16, wherein:

the fibers of the core comprise micro-fibers having an elongation at rupture AR in longitudinal traction of greater than or equal to 1.0%.

Claim 49. (*Previously Presented*) A laminate according to claim 16, wherein:

the fibers of the core comprise micro-fibers having an elongation at rupture AR in longitudinal traction of greater than or equal to 1.5%.

Claim 50. (*Previously Presented*) A laminate according to claim 16, wherein:

the fibers of the core comprise micro-fibers having an elongation at rupture AR in longitudinal traction of greater than or equal to 2.0%.

Claim 51. (*Previously Presented*) A laminate according to claim 16, wherein:

the core comprises a plurality of superimposed plies of composite material.

Claim 52. (*Previously Presented*) A laminate according to claim 16, wherein:

at least one of the two layers comprises a plurality of superimposed plies of composite material.

Claim 53. (*Previously Presented*) A laminate according to claim 51, wherein:

at least one of the two layers comprises a plurality of superimposed plies of composite material.

Claim 54. (*Previously Presented*) A laminate according to claim 16, wherein:

at least one of the two layers is transparent so that the core is visible, the core comprising decorating elements.

Claim 55. (*Previously Presented*) A laminate according to claim 16, wherein:

the laminate has a tensile strength R in a bending test T_f relative to a specimen test piece made of a carbon fiber composite having the same shape and rigidity as those of the test pieces tested, such that R is greater than or equal to 50 N/mm.

Claim 56. (*Previously Presented*) A laminate according to claim 16, wherein:

the laminate has a tensile strength R in a bending test T_f relative to a specimen test piece made of a carbon fiber composite having the same shape and rigidity as those of the test pieces tested, such that R is greater than or equal to 60 N/mm.

Claim 57. (*Previously Presented*) A laminate according to claim 16, wherein:

the laminate has a tensile strength R in a bending test T_f relative to a specimen test piece made of a carbon fiber composite having the same shape and rigidity as those of the test pieces tested, such that R is greater than or equal to 70 N/mm.

Claim 58. (*Withdrawn*) A method of manufacturing a laminate according to claim 16, wherein:

the core comprises at least one ply;

each of the two layers comprise at least ply;

the core and at least the two layers are superimposed;

the plies of the core and each of the layers comprise plies of woven or non-woven micro-fibers, oriented or non-oriented micro-fibers, and fibers preimpregnated with resin or non-preimpregnated with resin.

Claim 59. (*Withdrawn*) A use of a laminate according to claim 16 for manufacturing sports articles.

Claim 60. (*Withdrawn*) A use of a laminate according to claim 59 for manufacturing a sports article comprising a member selected from the group consisting of roller skates, skis, snowboards, skateboards, golf club shafts, golf club heads, scooters, cycles, fishing rods, racquets, helmets, ski poles, backpack frames, or tent pegs.

Claim 61. (*Withdrawn*) A use of a laminate according to claim 16 for manufacturing sports boots.

Claim 62. (*Withdrawn*) A use of a laminate according to claim 61 for manufacturing uppers or bottom assemblies of sports boots.

Claim 63. (*Withdrawn*) A sports article comprising a member used in claim 60.

Claim 64. (*Withdrawn*) A sports article comprising a member used in claim 61.

Claim 65. (*Withdrawn*) A sports article comprising a member used in claim 62.

Claim 66. (*Withdrawn*) A use of a laminate according to claim 16 for obtaining a composite laminate layer.

Claim 67. (*New*) A laminate comprising:

a sandwich structure comprising:

a core consisting essentially of a fiber-reinforced composite having a predeterminate mechanical strength;

two fiber-reinforced composite layers, the core being positioned between the two layers;

at least a portion of the fibers of the core having a mechanical strength significantly lower than a mechanical strength of at least a portion of the fibers of at least one of the two layers.

Claim 68. (New) A laminate comprising:

a sandwich structure comprising:

a core consisting essentially of a composite, the composite comprising a polymer resin matrix reinforced with fibers, the fibers of the composite consisting essentially of fibers having a mechanical strength no greater than a predeterminate magnitude;

two fiber-reinforced composite layers, the core being positioned between the two layers, fibers of the two fiber-reinforced composite layers being different from the fibers of the core;

at least one of the two layers of the fiber-reinforced composite layers comprising fibers having a mechanical strength greater than the predeterminate magnitude of the mechanical strength of the fibers of said core.

Claim 69. (New) A laminate according to claim 68, wherein:

the predeterminate magnitude of the mechanical strength of the fibers of the core is defined as a rupture force in longitudinal traction of less than or equal to 1,500 Mpa.

Claim 70. (New) A laminate according to claim 68, wherein:

the predeterminate magnitude of the mechanical strength of the fibers of the core is defined as a modulus in longitudinal traction of less than or equal to 50,000 Mpa.

Claim 71. (*New*) A laminate according to claim 68, wherein:

the predeterminate magnitude of the mechanical strength of the fibers of the core is defined as an elongation at rupture in longitudinal traction of equal to or greater than 1.0%.

Claim 72. (*New*) A laminate according to claim 68, wherein:

the predeterminate magnitude of the mechanical strength of the fibers of the core is defined as the following:

a rupture force in longitudinal traction of less than or equal to 1,500 Mpa;

a modulus in longitudinal traction of less than or equal to 50,000 Mpa;
and

an elongation at rupture in longitudinal traction of equal to or greater than 1.0%.